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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A microbead particle system for bioassay comprising:
 - at least one microbead particle made of polymeric material;
 - a pattern encoded on at least one portion of said at least one microbead particle, said pattern physically marked into a digital data layer of said at least one microbead particle to reveal or block a reflective, photoluminescent or absorbing pattern, said digital data layer cooperating with a transducing layer of said at least one microbead particle to produce a detectable binary data signal, said transducing layer being selected from the group consisting of: silver-containing films, indium-containing films, antimony-containing films and tellurium-containing films; and
 - a selected geometry effectively associated with said at least one microbead particle, wherein at least one of said microbead particles is shaped differently from another of said microbead particles enabling said at least one particle to be visually distinguished from said another of said microbead particles for identification purposes ~~said selected geometry capable, alone or with other artifacts, of identifying said at least one microbead particle;~~

wherein said microbead particle is suitable for chemical conjugation with ligands.
2. (Original) The microbead particle system as defined in claim 1 wherein said polymeric material is selected from the group consisting of thermoplastics, thermosets, photocrosslinkable resins, photopolymerizable resins, and organosilicon resins.
3. (Original) The microbead particle system as defined in claim 1 wherein said pattern is encoded in at least one dimension or within said portion.
4. (Original) The microbead particle system as defined in claim 1 further comprising at least one layer of material on or within said polymeric material, said at least one layer of material including material selected from the group consisting of dielectric materials, SiO₂, TiO₂, tantalum pentoxide, aluminum silicate, titanium nitride, metals, silver, gold, copper, nickel, palladium, platinum, cobalt, rhodium, iridium, photoluminescent compounds, aluminum tris (8-hydroxyquinoline), hydroxyquinoline aluminum chelate, N-p-methoxyphenyl-N-phenyl-p-methoxyphenyl-styrylamine, diphenyl-p-t-butylphenyl-1,3,4-oxadiazole, 4-dicyanomethylene-2-methyl-6-(p-dimethylamino styryl)-4H-pyran, and